

**WHAT IS CLAIMED IS:**

*Sub A3*

1. A portable computer system which includes a main body, a power supplying unit, and a liquid crystal display (LCD) apparatus having an LCD panel which is operated by electric power supplied by the power supplying unit and a back light which illuminates the LCD panel, said system further comprising:

5 a direct current to alternating current (DC/AC) inverter for supplying AC power to the back  
6 light;

7 a contrast sensing part for sensing contrast of a video signal displayed on the LCD panel and  
8 outputting a pulse width modulation (PWM) signal;

9 a DC converter for converting the PWM signal from the contrast sensing part into a DC  
10 signal;

11 a voltage controller provided between the DC converter and the DC/AC inverter for  
12 providing the DC signal from the DC converter as an operating voltage of the DC/AC inverter; and

13 a controller connected in series with the DC/AC inverter for sensing the operating voltage  
14 of the DC/AC inverter, and for controlling the voltage controller on the basis of the operating voltage  
15 of the DC/AC inverter.

1 2. The portable computer system according to claim 1, wherein the controller is directly  
3 connected to the DC/AC inverter, and the contrast sensing part is connected to the DC/AC inverter  
via the DC converter and the voltage controller.

1       3. The portable computer system according to claim 1, further comprising a back light  
2 manual selection part operable for suspending a back light automatic control function, and wherein  
3 the controller turns off the voltage controller when the back light manual selection part is operated  
4 to suspend the back light automatic control function.

1       4. The portable computer system according to claim 3, wherein the back light manual  
2 selection part is included in a keyboard unit provided in the main body.

5. A method of controlling a portable computer system which includes a main body to which  
a power supplying unit is connected, and an LCD apparatus having an LCD panel operated by  
electric power supplied by the power supplying unit, a back light for illuminating the LCD panel,  
and a contrast sensing part, said method comprising the steps of:

60       sensing an operating voltage of a DC/AC inverter supplying an AC voltage to the back light,  
and

7       converting a back light control signal, outputted from the contrast sensing part, into a DC  
8 signal, and controlling the DC signal to have an intensity for operating the DC/AC inverter so as to  
9 supply a DC operating voltage to the DC/AC inverter.

1       6. The method according to claim 5, further comprising the steps of:  
2       selecting a back light manual control function; and

3 suspending a back light automatic control function so as to allow a user to manually control  
4 the back light when the back light manual control function is selected.

1 7. The method according to claim 6, further comprising the step, prior to the sensing step,  
2 of determining whether the contrast sensing part is provided, and suspending the back light  
3 automatic control function so as to allow the user to manually control the back light when the  
4 contrast sensing part is not provided.

1 8. The method according to claim 7, wherein the back light automatic control function is  
2 carried out based on sensing, by the contrast sensing part, of a contrast of a video signal, displayed  
3 on the LCD panel.

1 9. The method according to claim 6, wherein the back light automatic control function is  
2 carried out based on sensing, by the contrast sensing part, of a contrast of a video signal displayed  
3 on the LCD panel.  
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1 10. The method according to claim 5, further comprising the step, prior to the sensing step,  
2 of determining whether the contrast sensing part is provided, and suspending a back light automatic  
3 control function so as to allow the user to manually control the back light when the contrast sensing  
4 part is not provided.

1           11. The method according to claim 10, wherein the back light automatic control function is  
2       carried out based on sensing, by the contrast sensing part, of a contrast of a video signal displayed  
3       on the LCD panel.

1           12. The method according to claim 5, wherein the back light automatic control function is  
2       carried out based on sensing, by the contrast sensing part, of a contrast of a video signal displayed  
3       on the LCD panel.

15           13. A portable computer system having a liquid crystal display (LCD) and a back light  
20       illuminating the LCD panel, said system further comprising:

25           direct current to alternating current (DC/AC) inverter means for supplying AC power to the  
30       back light;

35           contrast sensing means for sensing a contrast of a video signal displayed on the LCD panel  
40       and outputting a pulse width modulation (PWM) signal;

45           DC converter means for converting the PWM signal outputted by the contrast sensing means  
50       into a DC signal; and

55           voltage controller means disposed between the DC converter means and the DC/AC inverter  
60       means for controlling the DC signal from the DC converter means so that it has an intensity of an  
65       operating voltage for the DC/AC inverter means, and for supplying the controlled DC signal to the  
70       DC/AC inverter means.

1       14. The portable computer system according to claim 13, further comprising controller  
2       means connected to the DC/AC inverter means for sensing the operating voltage of the DC/AC  
3       inverter means, and for controlling the voltage controller means on the basis of the sensed operating  
4       voltage.

1       15. The portable computer system according to claim 14, wherein the controller means is  
2       directly connected to the DC/AC inverter means, and the contrast sensing means is connected to the  
3       DC/AC inverter means via the DC converter means and the voltage controller means.

1       16. The portable computer system according to claim 14, further comprising back light  
2       selection means operable by a user for selecting manual control of the back light and for suspending  
3       automatic control of the back light.

1       17. The portable computer system according to claim 16, wherein the back light selection  
2       means comprises a keyboard unit of the portable computer system.

1       18. The portable computer system according to claim 16, wherein the controller means turns  
2       off the voltage controller means when the user operates the back light selection means to select the  
3       manual control of the back light.

1       19. The portable computer system according to claim 13, further comprising back light  
2       selection means operable by a user for selecting manual control of the back light and for suspending  
3       automatic control of the back light.

1       20. The portable computer system according to claim 19, wherein the back light selection  
2       means comprises a keyboard unit of the portable computer system.